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Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development
First session
New York, 6-10 March 2000
Item 2 of the provisional agenda
Adoption of the agenda and other organizational matters

Provisional agenda

1. Election of officers.
2. Adoption of the agenda and other organizational matters.
3. Preparations for the ninth session of the Commission on Sustainable Development, on energy issues.
4. Provisional agenda for the second session of the Group of Experts.
5. Adoption of the report of the Group of Experts on its first session.

Annotations

1. Election of officers

The Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development may wish to elect a Bureau consisting of five members, one from each of the five regional groups of the United Nations, including two Co-Chairmen, one from a developed country and one from a developing country (Economic and Social Council resolution 1999/60).

Recalling its resolution 1999/60 of 30 July 1999 on preparations for the ninth session of the Commission on Sustainable Development, on energy issues, and bearing in mind the specific nature and purposes of the Group of Experts, which will meet in conjunction with the inter-sessional ad hoc working groups of the Commission at its eighth and ninth sessions, in 2000 and 2001, the Council decided, on the basis of rule 24, paragraph 1 (c), of its rules of procedure, that States that were not members of the Commission would be allowed to nominate their nationals to the Bureau of the Group (Council decision 1999/285).

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2. Adoption of the agenda and other organizational matters

In accordance with rule 7 of the rules of procedures of the functional commissions of the Council, which also apply, insofar as they are practicable, to the proceedings of its subsidiary organs, at the beginning of each session the Group of Experts shall adopt the agenda for that session.

3. Preparations for the ninth session of the Commission on Sustainable Development, on energy issues

At its nineteenth special session, the General Assembly adopted the Programme for the Further Implementation of Agenda 21 (General Assembly resolution S-19/2, annex), which included the multi-year programme of work for the Commission on Sustainable Development, 1998-2002, under which the sectoral theme of the ninth session of the Commission will be atmosphere/energy and the topic for the economic sector of the session will be energy/transport. The General Assembly further stated that preparations for the ninth session of the Commission should be initiated at the seventh session of the Commission, and should utilize an open-ended intergovernmental group of experts on energy and sustainable development, to be convened in conjunction with inter-sessional meetings of the eighth and ninth sessions of the Commission. Pertinent decisions of the General Assembly are contained in the Programme for the Further Implementation of Agenda 21 (see General Assembly resolution S-19/2, annex, chap. III.B, paras. 42-56).

Furthermore, at its nineteenth special session, the General Assembly recognized the complexities and interdependencies inherent in addressing energy issues within the context of sustainable development, and underscored that in line with the objectives of Agenda 21, the ninth session of the Commission should contribute to a sustainable energy future for all.

Pursuant to Council resolution 1999/60 and decision 1999/285, the first session of the Ad Hoc Intergovernmental Group of Experts on Energy and Sustainable Development will be held from 6 to 10 March 2000. Furthermore, in its resolution 1999/60, the Council called upon Governments to actively participate and contribute to the preparatory process, and encouraged the participation in the preparatory process of civil society and other major groups, including the private sector, particularly from developing countries.

Documentation

Report of the Secretary-General entitled "Energy and sustainable development: key issues" (E/CN.17/ESD/2000/3)

Report of the Secretary-General on national submissions (E/CN.17/ESD/2000/2)

4. Provisional agenda for the second session of the Group of Experts

The Group of Experts will have before it the draft provisional agenda for its second session.

5. Adoption of the report of the Group of Experts on its first session

The Group of Experts will report on its first session to the Commission on Sustainable Development at its eighth session, in 2000.

Annex I

Proposed programme of work

Date/time	*Agenda item*	*Programme*
Monday, 6 March		
10-11 a.m.		Opening of the session
	Item 1	Election of officers
		Opening statements by the Co-Chairs
	Item 2	Adoption of the agenda and organization of work
	Item 3	Preparations for the ninth session of the Commission on Sustainable Development, on energy issues
		Introduction
		Presentation of the results of the World Energy Assessment
11 a.m.-1 p.m.		General discussion
3-6 p.m.		General discussion (continued)
		Panel on Global Energy Trends and Sustainable Development
		Panel on Financing, Investment and Sustainable Energy
Tuesday, 7 March		
10 a.m.-1 p.m.		Discussion of key issues of energy and sustainable development
3-6 p.m.		Discussion of key issues of energy and sustainable development (continued)
Wednesday, 8 March		
10 a.m.-1 p.m.		Informal consultations on key issues
3-6 p.m.		Informal consultations on key issues (continued)
Thursday, 9 March		
10 a.m.-1 p.m.		Discussion of the programme of work between the first and second sessions of the Group of Experts
3-6 p.m.		Informal consultations on key issues (continued)
Friday, 10 March		
10 a.m.-1 p.m.		Informal consultations on the programme of work between the first and second sessions of the Group of Experts
3-6 p.m.	Item 4	Provisional agenda for the second session of the Group of Experts
	Item 5	Adoption of the report on the first session of the Group of Experts
		Closure of the meeting

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Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development
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Item 3 of the provisional agenda*
Preparations for the ninth session of the Commission on Sustainable Development, on energy issues

National submissions

Report of the Secretary General

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I. Introduction

1. The Economic and Social Council, in its decision 1999/60, invited the Secretary-General, on the basis of submissions and information provided by Governments and in close collaboration with entities within the United Nations system as well as other relevant organizations, to prepare analytical reports and other documentation, as appropriate, for consideration at the first session of the Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development. The present report summarizes the submissions received from respective Governments in response to a request by the Secretariat.[1]

II. Government submissions

2. The following have been identified as issues of importance by many of the respondent countries as issues requiring attention during the preparatory process leading to the ninth session of the Commission: access to energy services, accelerated development and use of renewable sources of energy, improved energy efficiency, cleaner fuel technologies, liberalization and privatization, finance and investment, economic instruments and international cooperation. Many of the countries also made submissions on energy and transportation and energy and atmosphere. These issues are highlighted in detail below.

3. Implicit in the submissions is the acknowledgement of the special role that energy plays in advancing economic, social and environmental objectives of sustainable development, and the need to formulate and implement sustainable energy policies. Many countries have attempted to identify what such a policy should include, suggesting, for example, that it should ensure security of supply in order to support economic and social development while protecting the environment; improve efficiency of production, conversion and use; emphasize the development and more widespread use of renewable sources of energy; or protect the environment through, among other things, reduced emissions of greenhouse gases and other pollutants and maintenance of local air quality.

4. A number of countries highlighted the challenges faced in developing and implementing national energy policies, chief among which is the difficulty in harmonizing various often conflicting goals. Meanwhile, some countries stressed the importance of an integrated approach in the planning for and implementation of national energy programmes and of extending such approaches to rural areas.

5. The number of responses, most of which were from developed countries, is quite small. Thus, most of the issues highlighted tend to reflect the perspective from these countries rather than being representative of the world as a whole. The main points made in the submissions have been summarized under the separate headings set out below.

A. Access to energy services

6. Respondents affirmed that an adequate supply of energy at affordable prices is an issue of great importance. According to many of the respondents: (a) the supply of all forms of energy should be based on reliable diversified sources, preferably indigenous, and on a culture of energy conservation and efficiency of use; (b) overdependence on imported oil should be avoided; and (c) energy pricing structures should reflect economic, social and environmental cost associated with the production, conversion and use of energy.

7. Different countries have developed the necessary infrastructure and have put in place measures and procedures to ensure efficient, effective and equitable distribution of energy services to consumers, with minimum interruption. A number have stated that security can be further increased through regional cooperation, the interconnection of energy networks and agreements that facilitate international trade in energy and energy products.

8. Respondent developing countries have identified high levels of dependency on imported fossil fuels and electricity as well as large disparities in access to energy supply between urban and rural populations, where the bulk of the population live, as among the major problems facing most developing countries, especially those in Africa.

B. Accelerated development and use of renewable sources of energy and technologies

9. All respondents underscored the need to promote further development of renewable sources of energy and the more widespread application of new and improved technologies for both small- and large-scale applications as part of progress towards achieving a sustainable energy future.

10. A wide variety of measures and approaches have been used to achieve this goal, some of which may be of interest to other countries. Examples of the measures taken include (a) undertaking studies to identify barriers to the development and use of renewable sources of energy, and the development of policies to ensure that such barriers are not created and that these sources are not discriminated against; (b) establishing adequate institutional and planning frameworks for promoting the development of renewable sources of energy and technologies; (c) developing human resources in the field of renewable sources of energy; (d) deepening public awareness regarding the potential of these resources; (e) promoting the development and implementation of appropriate standards and guidelines (including manuals) and codes for the use of renewable energy technologies; (f) establishing and disseminating suitable information systems on renewable sources of energy and of energy technologies; (g) fully integrating available renewable energy technologies into the mainstream of energy economy; (h) allocating more resources to research, development and demonstration aimed at developing new technologies and improving existing ones; (i) simplifying administrative procedures for setting up small-scale installations; (j) providing incentives (including subsidies) and financial credits for the development of renewable sources of energy and technologies; (k) encouraging community-based renewable energy development; (l) guaranteeing access to the electricity grid; and (m) strengthening cooperation among national, industrial, academic, governmental and other organizations in long-term research and renewable sources of energy.

11. One developing country submission stated that renewable energy technologies are relatively expensive and that the higher cost of investment has in part resulted from the high tariffs on renewable technology components and the high cost of imports and taxes. It added that a development strategy for renewable sources of energy should therefore be meticulously planned, encompassing technology, the functioning of markets, sources of finance, including the private sector, and environmental issues.

C. Improved energy efficiency

12. A number of Governments have launched a variety of measures to improve energy efficiency thought to be of interest to other States. These include developing and applying efficient energy technologies, applying combined heat and power generation, energy conservation programme in the industrial and tertiary sectors, and improving energy efficiency in the building sector. For some countries, energy conservation programmes have been promoted, as has legislation (as specified by law or regulation), voluntary programmes (which have been facilitated by the provision of financial assistance) and a combination of the two (complementary programmes) which has involved training and promoting public awareness.

13. In some countries, efforts directed at improved efficiency in the generation, transformation and distribution have taken such forms as improved information, financial incentives and direct investment. In the developed countries, improving energy efficiency is viewed as playing a key role in reducing greenhouse gas and other emissions. The electricity sector in many countries, developed and developing, has been at the forefront in formulating and implementing energy efficiency measures, for example those involving demand-side management integrated resource management planning, and reduction of power losses.

14. The approaches taken to achieve the goals vary widely. The ones that are referred to repeatedly by respondents are: (a) identifying and overcoming barriers which prevent widespread use of energy efficiency, (b) energy auditing and training of professionals, (c) introducing energy efficiency labels, (d) levying high taxes, (e) adopting appropriate legislation, (f) introducing voluntary agreements, (g) developing standardization procedures, and (h) putting in place institutional frameworks which promote energy efficiency.

D. Cleaner fuel technologies

15. Given the prominent role played by fossil fuels in meeting the energy requirements of many countries, the development and application of clean fuel technologies occupies a central place in the policy of many countries, as part of the effort to protect the atmosphere and move towards a sustainable energy future. Such activities are aimed at improving efficiency and reducing greenhouse gas emissions (mainly carbon dioxide) and other pollutants, such as sulphur dioxide, oxides of nitrogen and particulate matter.

16. With regard to coal, emphasis has been placed on the development of cleaner technologies, improvement in electricity generation efficiency, desulfurization and denitrofication, underground gasification and vaporization by combustion. Many countries continue to provide sustained research and development support to the development of new technologies. For oil, emphasis has been placed on the development of technology for improving the desulfurization rate and producing low sulphur.

17. Fuel substitution — low carbon for high carbon — has received particular attention, witness the increasing use of natural gas to replace coal and oil or of oil to replace coal, for electricity generation. A number of programmes have been initiated in order to use renewable sources of energy, in the long term, to partly replace fossil fuels for electricity generation and other applications.

E. Liberalization and privatization in the energy sector

18. Many countries have undergone, embarked on or are in the process of implementing reforms and the restructuring of their energy markets. The main objectives of such efforts are to increase competition in the energy sector and bring about more efficiency in the sector, provide adequate energy at reasonable prices to consumers; reduce the investment burden of the public sector; ensure that consumers are provided with the best possible safe services; encourage private-sector participation in the investment in the energy sector; and provide consumers with more options on energy suppliers and quality of supply.

19. While for some of the respondents the privatization process is not complete, the verdict so far is positive: the private sector is increasingly participating in the generation and distribution of energy services, with better availability and reliability. Competition is the order of the day. This in turn leads to minimization of losses and more efficient use of fuels and hence reduced adverse environmental impact.

20. For a number of developing countries, inadequate human resources, lack of standards and other problems are likely to slow the speed of liberalization.

F. Financing and investment

21. Energy-producing and energy-consuming infrastructure is capital intensive. Much of the financing for investment will be borrowed through international capital markets. While it is anticipated that in the current situation characterized by market liberalization, the private sector will contribute an increasing share of the finances required for investment in the energy sector, the public sector has a vital role to play.

22. A number of respondents described financing and investment activities which they have undertaken as part of measures to implement national policies. In addition, some have highlighted difficulties experienced in obtaining adequate financing for energy efficiency, and renewable energy programmes and for research and development, while others have indicated the kind of actions being undertaken or contemplated in financing and investment as part of international cooperation efforts. Most of the respondents which address these two issues emphasize the need for financing and investment in these areas — energy efficiency, renewable sources of energy, cleaner fuel technologies — as part of an effort towards achieving sustainable energy development.

G. Economic instruments

23. Economic instruments, such as taxation, pricing and subsidies — for incentives and disincentives — have been successful over the years in the energy sector. Systematic use of existing and new forms of economic instruments aimed at promoting the use of energy services that lead to a more sustainable energy future, while discouraging the use of the ones with negative environment and health impacts, is called for.

24. For some, taxation is one of the main policy instruments in relation to climate change and environmental policies. The types of taxes have varied reflecting the particular policy perspectives of each country. Most have been in the form of taxes for energy use. Others have also included carbon taxes, sulphur taxes etc. It has been stressed that economic instruments must be seen in the context of other policy measures, namely, motivation and regulatory measures.

H. International cooperation

25. Many respondents embraced the significance of international cooperation, especially with developing countries and countries in transition, as a means to improve the pursuit of a sustainable energy future. They see this also as a means to enhance their economic performance and improve their social conditions, while protecting the environment or reducing adverse environment impacts. Other areas of interest to countries are equitable development, multipartnership and dissemination of information, including sharing experiences at the field level. International cooperation encompasses cooperation within multinational organizations, bilateral cooperation or regional cooperation.

26. A number of respondents highlight cooperation with multilateral organizations, such as the World Bank (energy management assistance programme), the Global Environment Facility (projects for increased use of new and renewable sources of energy), the United Nations Secretariat and other bodies of the United Nations system (capacity-building preparation of analytical studies). They participate in the activities of these and other intergovernmental bodies, such as the International Atomic Energy Agency and the European Union.

27. Bilateral cooperation with developing countries has been widespread and varied, and has included institution- and capacity-building, funding projects and programmes in new and renewable sources of energy, contributing to fossil fuel development and transfer of technology.

I. Sustainable transportation

28. The transport sector is among the fastest growing, with associated sharp increases in energy consumption. Transport energy use has an impact on the country's economy, as well as its social and environment well-being (local air pollution and greenhouse gas emissions).

29. Most respondents call for transport policies that contribute to the economic, social and environmental objectives of sustainable development. To that end, they stress the need to develop efficient transport systems with reliable services; promote transportation efficiency through pricing and other mechanisms; increase the use of cleaner alternative fuels and support human resource development; transfer demand from road to rail and water in order to reduce energy consumption and environmental consequences; encourage the use of mass transit over private vehicles; and phase out leaded gasoline.

J. Other issues

1. Energy and atmosphere

30. Respondents from developed countries made a number of submissions under this topic. The energy sector is the main source responsible for emissions into the atmosphere of greenhouse gases and other pollutants, such as sulphur dioxide, oxides of nitrogen and particulates. Consideration should therefore be given to increasing energy services without proportionate increase in primary energy consumption and increasing primary energy production without increasing pollution. Such consideration should draw on discussions on improved efficiency; accelerated development and use of renewable sources of energy; development and application of cleaner fuel technologies; increased financing and investment in sustainable energy development; increased research development and demonstration activities; and improved information and regional cooperation in the above areas.

2. Nuclear energy

31. As part of the goal for attaining economic growth and energy security, a number of countries intend to continue developing and using nuclear power. A related goal is that of reducing greenhouse gas emissions. In many of these countries, nuclear energy accounts for a significant portion of electricity production. Meanwhile, a number of countries which hitherto used nuclear energy have decided to discontinue its use as

an energy source and to decommission the nuclear reactors, while others have opted not to construct new nuclear plants. Some countries, because of technical considerations, such as power system size, are not considering introducing nuclear energy in the foreseeable future.

3. Research, development and demonstration

32. Support has been provided to the public and private sectors to promote research, development and demonstration in sustainable energy technologies. Of particular interest are renewable energy technologies as well as fossil fuel technologies, including for cleaner fuel development. Of equal importance are technologies for efficiency in the production, conversion, transfer, distribution and use of energy.

III. Observations on the submissions

33. As noted, only a small number of Governments have provided information on their activities in the field of energy in relation to sustainable development and identified the issues which they consider to warrant attention during the preparatory process leading to the ninth session of the Commission on Sustainable Development, in 2001. Most of the responding Governments are from developed countries, mainly Europe. The type of activities they are involved in and the perspective they provide tend to be similar. With only a few respondents from developing countries, the kind of issues that concern them most have yet to be identified.

34. Most of the issues that have been identified as important are universal in nature. Nevertheless, the degree of emphasis would be different overall if many more Governments from developing countries had made their submissions. A case in point relates to access to energy services: most responses state that there are no problems in this area. Yet it is common knowledge that more than 1.8 billion people, mainly in the rural areas of developing countries, do not have access to adequate and affordable energy services even to meet their basic needs. For many developing countries, the lack of capacity, especially in skilled human resources, is a hurdle that must be overcome in order for the countries to formulate suitable policies for sustainable energy development and to effectively and efficiently implement such policies. This is an area in which international cooperation is urgently needed in the form of financial and other material assistance for further training in the different aspects of energy services. A related need, as expressed by a number of respondents from developing countries, is to promote the transfer of technology in energy and related sectors, in particular the elimination of barriers in the transfer of technology.

35. With regard to international cooperation in the energy sector, the issue of the flow of private investment into energy infrastructures and other services may need to be addressed, especially in relation to such topics as creating a favourable business environment for investment and assisting developing countries in developing suitable regulatory and fiscal structures. Access to financial resources and the provision of financial assistance by the international community to developing countries is a recurring theme for respondents from developing countries.

36. What is important from the perspective of developing countries is cooperation through technical assistance; education, training and dissemination of information; research, development and demonstration activities; and the replication of some of these procedures in developing countries.

37. It is hoped that during the period between the first and second sessions of the Group of Experts, more Governments will make submissions as requested by the Economic and Social Council and thus enable the Secretariat to prepare a more rigorous and thorough analysis of the key issues for consideration by the Commission at its ninth session.

Notes

[1] The following countries have responded: Austria, Brunei Darussalam, Barbados, Belgium, Brazil, China, Czech Republic, Denmark, Egypt, Finland, France, Germany, Greece, Indonesia, Ireland, Israel, Italy, Japan, Luxembourg, Namibia, Netherlands, New Zealand, Norway, Philippines, South Africa, Spain, Sweden, Switzerland, Thailand, United Kingdom of Great Britain and Northern Ireland. The European Union has also made a submission.

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Energy and sustainable development: key issues

Report of the Secretary-General

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Annex

Reports of the Secretary-General to be prepared for submission to the Committee on Energy and Natural Resources for Development 13

I. Introduction

1. In its resolution 1999/60, the Economic and Social Council decided to hold the first session of the Ad Hoc Open-Ended Intergovernmental Group of Experts on Energy and Sustainable Development in New York in the first quarter of 2000, and invited the Secretary-General to prepare analytical reports and other documentation, as appropriate, for consideration by the Group of Experts at its first session. The present report has been prepared in response to that request.

2. The present report draws heavily on contributions and comments from the members of the Ad Hoc Inter-Agency Task Force on Energy, and also draws on the submissions and information provided by Governments as well as other relevant organizations, as requested at the seventh session of the Commission on Sustainable Development. The information contained in the submissions from Governments is presented in a separate report of the Secretary-General for consideration by the expert group.

II. Background

3. At its nineteenth special session, in its resolution S-19/2, the General Assembly adopted the Programme for the Further Implementation of Agenda 21. The Assembly underscored the essential role of energy for economic and social development and the need to reduce negative environmental impacts. Furthermore, it stated that sustainable patterns of production, distribution and utilization of energy are of critical importance to the above-mentioned objectives, and discussed a number of issues facing the challenge of energy for sustainable development.

4. At the special session, the General Assembly affirmed that the objectives envisaged for sustainable energy futures should reflect the need for equity, adequate energy supplies and increasing energy consumption in developing countries, where the increase in the level of energy services would have a beneficial impact on poverty alleviation by increasing employment opportunities and improving transportation, health and education. It recalled that advances towards sustainable energy utilization are taking place, and that all parties can benefit from progress made in other countries. It also stressed the need for international cooperation to ensure the promotion of energy conservation and improvement of energy efficiency, the adoption of renewable energy technologies, and the development and dissemination of other innovative energy-related technologies.

5. The Assembly also underscored the need for encouraging better coordination on the issue of energy within the United Nations system, under its guidance. It further emphasized the need for:

(a) A movement towards sustainable patterns of production, distribution and use of energy;

(b) Evolving measures to strengthen international cooperation in the field of energy, especially international assistance to developing countries in their domestic efforts to provide adequate modern energy services to all sections of the population in an environmentally sound manner;

(c) Policies and plans that take into account the economic, social and environmental aspects of the production, distribution and use of energy;

(d) Commitments for the transfer of relevant technology to developing countries and countries with economies in transition so as to enable them to increase their use of renewable energy sources and cleaner fossil fuels, and to improve efficiency in energy production, distribution and use and in other production processes that are intensive users of energy;

(e) Efforts in research on and development and use of renewable energy technologies at the international and national levels;

(f) Further research and development and the application and transfer of fossil fuel technology of a cleaner and more efficient nature through effective international support;

(g) Environmental cost internalization so as to achieve a more sustainable use of energy and to reduce and gradually eliminate subsidies for energy production and consumption that inhibit sustainable development;

(h) Better coordination on the issue of energy within the United Nations system;

(i) Integrated transport policies and international cooperation in the transfer of environmentally sound technologies in the transport sector;

(j) Measures to mitigate the negative impact of transportation on the environment, including improving efficiency in the transportation sector;

(k) Phasing out the use of leaded gasoline;

(l) Partnerships at the national level for strengthening transport infrastructures and developing innovative mass transport schemes.

6. To advance the move towards sustainable patterns of production, distribution, and utilization of energy at the global level, the Assembly decided that the Commission on Sustainable Development would discuss energy issues at its ninth session, in 2001. Noting the vital role of energy in achieving sustained economic growth, especially for developing countries, and recognizing the complexities and interdependencies inherent in addressing energy issues within the context of sustainable development, the Assembly decided that preparations for the ninth session of the Commission were to be initiated at the seventh session of the Commission, and should utilize an open-ended intergovernmental group of experts on energy and sustainable development, to be convened in conjunction with the inter-sessional meetings of the eighth and ninth sessions of the Commission. In line with the Programme for Further Implementation of Agenda 21 and the need for the Commission at its ninth session to contribute to a sustainable energy future for all, its sectoral theme will be "Atmosphere/energy" and the economic sector theme will be "Energy/transport".

7. As part of a coordinated approach to preparations for the ninth session of the Commission by the United Nations system, the Inter-Agency Committee on Sustainable Development (IACSD), at its eleventh session (New York, February 1998), concluded that the Commission process in the period 1999-2001 provided an excellent opportunity for the United Nations system to elaborate a common approach to its energy agenda in the context of sustainable development. On that basis, IACSD established the Ad Hoc Inter-Agency Task Force on Energy for Sustainable Development with a mandate to elaborate such an approach and to support preparations for the discussions of the ninth session of the Commission.

8. Also envisaged in the preparatory process are events both within the United Nations system, including through the regional commissions, and beyond it that can provide appropriate inputs to the intergovernmental process. One such input to the preparatory process is the *World Energy Assessment*, which provides information on and analysis of sustainable energy issues and options. As inputs to the preparatory process, the Committee on Energy and Natural Resources for Development, which is a committee of experts, has provided the report on its first session, with other inputs planned in the form of a report to the Economic and Social Council on the specific energy issues identified at that session. That work will be facilitated by a number of reports to be prepared by the Secretary-General (see annex). The General Conference of the United Nations Educational, Scientific and Cultural Organization and the General Assembly have adopted several resolutions endorsing the World Solar Programme (1996-2005) launched at the World Solar Summit (Harare, 1996) as a contribution to sustainable development and calling upon member States to contribute to its successful implementation.

III. Key issues

9. Energy is linked to such major global issues as economic development, poverty alleviation and social development, and also includes gender-related issues, transportation, health, environmental quality and energy security. Even though the importance of energy for sustainable development is now well recognized by the international community, major challenges still remain that call for more focused attention to these global issues as well as concerted action to address them.

10. The magnitude and scale of the energy problem facing the world today in relation to sustainable human development and environmental objectives can be gauged by the fact that nearly one third of the global population of 6 billion continue to lack access to modern energy and transportation services. Wide disparities exist in the levels of energy consumption within and between countries. Current patterns of energy production, distribution and utilization carry the risk of becoming unsustainable. The health and environmental consequences of energy production and utilization have become major challenges. It has therefore become imperative to pursue sustainable energy paths for a sustainable energy future for all.

11. In its work on the topic of energy for sustainable development, the Ad Hoc Inter-Agency Task Force on Energy for Sustainable Development considered issues

pertaining to a sustainable energy future, with due regard to meeting socio-economic and environmental objectives that have been established by the United Nations, and took into account the issues reflected in the submissions and information provided by Governments as well as relevant organizations in connection with preparations for the ninth session of the Commission. The Task Force identified key issues and options under the following categories as input for discussion, at the intergovernmental level, as part of the preparatory process for the ninth session of the Commission:

(a) Accessibility of energy — the need for ensuring the availability of energy services in a reliable way at affordable costs, thereby contributing to security of energy supplies;

(b) Rural energy services — meeting basic and development needs of rural and dispersed populations;

(c) Financing the energy sector — funding the sector improvements needed for sustainability;

(d) Energy efficiency — improved efficiency in energy production, conversion, distribution and utilization;

(e) Advanced energy technologies — cleaner fossil fuel and improved nuclear energy technologies;

(f) Renewable energy as a component of sustainable energy systems — accelerated development and wider-scale utilization;

(g) Energy-related issues in transportation — improving energy efficiency in the transportation sector and mitigating environmental and health impacts;

(h) International cooperation — enhanced bilateral and multilateral cooperation, capacity-building, mobilization of investment capital and transfer of sustainable energy technologies.

A. Accessibility of energy

12. Accessibility of energy relates to a number of levels. Global demand for commercial energy services is expected to grow, especially with respect to the approximately 1.8 billion people without access to modern energy services and continued population growth. Global conventional energy resources are considered to be adequate to meet the projected growth in demand for energy services for decades to come, provided that technology is developed to exploit and utilize those resources in an efficient manner. Given the uneven distribution of energy resources, the issue of accessibility of energy focuses on the need to ensure the availability of energy services in a reliable way and at affordable costs within both national and global contexts, thereby contributing to security of energy supplies, while at the same time providing reliable energy markets that can generate a profitable income for producers.

13. While it is important to address ways of meeting long-term global need for energy through a transition to a sustainable energy system, it is also important to consider the issue of meeting the basic energy requirements of low-income people.

14. Thus, the issues related to energy accessibility at the international and national levels include the following:

(a) What international arrangements could be established to ensure greater reliability of energy supply at affordable costs for consumers as well as energy markets that generate appropriate prices for producers?

(b) What special international measures would be required to ensure that countries without any indigenous commercial energy resources have access to the basic energy to meet their minimal energy requirements?

(c) What national policies can be adopted to ensure that the basic energy requirements of low-income rural and urban dwellers are met with modern energy services?

15. Options available at the national level that could be considered include policies to subsidize modern energy supplies to low-income households, such as cross-subsidized "life-line" connections and services, and to remove obstacles to access to energy by the poor. The special circumstances of rural areas are examined below.

16. At the international level, the options for assisting least developed countries include increased official development assistance, which could be on a bilateral or multilateral basis; and increased international cooperation in the development of national sustainable energy strategies to address the needs of low-income households.

17. The options for addressing the issue of security of energy supplies and markets must also be tackled at the international level, and require a consideration of the dynamics of both market mechanisms and instruments that could be effective in achieving increased reliability.

B. Rural energy

18. Issues confronting rural energy are wide ranging. In a majority of developing countries, the provision of energy services to rural areas remains inadequate due to the dispersed nature of the population and the low-income levels of rural dwellers. Although there is a growing recognition of the importance of an integrated approach to rural development, which emphasizes the linkages between energy, agriculture and environment, efforts to find the most appropriate solution for rural area energy problems are hampered by insufficient attention to rural development in general and rural energy needs in particular. Policies aimed at providing modern energy services to rural areas in many countries have focused on extending the national electricity grids. Though successful in many instances, such policies have often necessitated substantial subsidies to customers in remote areas with low population densities since the unit cost of supply is higher. Current electricity pricing structures may have discouraged the adoption of renewable energy technologies despite life-cycle cost advantages, which exist for many rural areas since transportation and/or transmission costs are not a significant portion of the total costs.

19. The issues to be addressed with regard to rural energy include the following:

(a) How can obstacles to centralized and renewable energy systems, as well as other approaches to rural electrification, be overcome so as to promote use of sustainable and affordable rural energy systems, including cleaner and more efficient technologies for traditional biomass, modern biomass and other renewable energy systems?

(b) How best can capacity-building, with an emphasis on building local capacity as an integral part of rural energy policies, along with appropriate management and institutional arrangements for rural energy development, be promoted?

(c) How can market-based approaches for the provision of sustainable energy services to rural areas be fostered?

20. Policy options available to developing countries to address rural energy problems include integrating energy policies into overall rural development strategies; improving the quality and quantity of information on the availability and use of energy from all sources in rural areas for use by policy makers; initiating and/or strengthening rural development policies, including the elimination of bias towards urban development; establishing as a priority the provision of electricity in a cost-effective manner to unserved rural populations; launching, where reasonable, sustained programmes of investment in decentralized rural energy schemes based on renewable energy for rural areas not served by grids; adopting rational pricing of energy to encourage conservation and efficient use; and the phased removal of subsidies, except for "life-line" services.

21. Technology dissemination approaches at the national level include raising awareness and educating consumers about the advantages and disadvantages of renewable energy technologies, perhaps utilizing and/or strengthening existing extension programmes; disseminating information; and providing training.

C. Financing the energy sector

22. Since the energy sector is infrastructure-intensive it tends to be one of the more costly sectors of the national economy to improve and upgrade in the direction of sustainability. Thus, a major challenge facing the world as a whole is how to mobilize the investments necessary for sustainable energy systems. Moreover, given the vital role of electricity in social and economic development worldwide, developing countries face the particularly difficult challenge of mobilizing the investments needed for increasing the supply of electricity that is essential to sustain their economic growth and to meet basic needs. Problems relating to the financial viability of public electric utilities have also retarded effecting efficiency improvements in the generation, transmission and distribution of electricity, as well as in the management of demand.

23. Thus, the following are major issues at the national level:

(a) How can countries make greater use of their domestic private sectors and foreign partners for mobilizing finance for energy sector development, thus reducing pressure on government budgets?

(b) How can countries identify and select the right mix of policies and market-based mechanisms to accomplish market transformation and manage demand?

24. Options that can be considered for addressing this issue include institutional and legislative reforms, privatization and pricing reforms based on the internalization of environmental and social costs throughout the life cycle of energy services. More specific options include providing customs duty and tax concessions; introducing market transformation initiatives through government procurement programmes; promoting innovative financing arrangements, especially for low-income inhabitants, such as micro-financing, cooperative arrangements with credit and licensing agreements to encourage the private sector to provide certain energy services, particularly in rural areas; engaging development finance institutions and commercial banks in providing loans for small-scale projects; building capacity at the corporate and community levels; and inviting private sector and local communities to contribute to achieving the intended goals.

D. Energy efficiency

25. Improving the efficiency of energy conversion and end-use applications can lead to a reduction of the energy consumption per unit product or activity, a fact that has been demonstrated in several industrialized countries and a number of developing countries. Making the energy system more efficient contributes to improving local air quality and reducing regional acidification, and offers considerable potential for greenhouse gas reduction. It also reduces the investment requirements of the energy sector for any given level of gross domestic product.

26. In the consideration of policies and measures to achieve wider gains in energy efficiency, the issues of crucial importance can be classified into the following categories:

(a) Constraints and barriers that need to be addressed and measures to overcome them;

(b) Improving the efficiency of production and utilization of energy and materials;

(c) Sectoral energy efficiency improvement in industry, public, residential and commercial buildings and agriculture.

27. Many technological opportunities exist for improving energy efficiency in residential and commercial buildings, industry, transportation, agriculture and forestry. While numerous technologies to improve energy efficiency and manage energy demand more effectively are readily available, new developments can enhance the potential of this option further. In modern societies, industry consumes a substantial share of energy. A major part of industrial energy is utilized by the basic materials production and manufacturing sector, with non-manufacturing industries, including mining, oil and gas extraction, construction and agriculture, accounting for the rest. Therefore, material efficiency improvement, including the recycling of materials and management of waste, can reduce energy demand and greenhouse gas and other polluting emissions. The growth of the electric power sector, with its dominant role in modern societies, has environmental implications that need to be addressed. In the electric power sector, the use of coal will continue to be a major source of energy in many countries, and the inefficient burning of coal is a matter of concern from health and environmental standpoints.

28. The following issues arise from these concerns:

(a) Why have many developing countries yet to take full advantage of energy efficiency measures, particularly in industry? What are the constraints and barriers that need to be addressed?

(b) What can be done to accelerate the development of cleaner and high-efficiency coal-based power generation technologies and to facilitate their transfer to developing countries?

(c) What are the challenges facing the adoption of low-carbon fuels, such as natural gas, and of high-efficiency power generation options, such as combined-cycle technologies?

(d) How can international cooperation facilitate the movement towards more efficient extraction, conversion and utilization of energy?

(e) What international cooperation measures with time-bound commitments would enhance a movement to a more efficient energy system?

29. With the adoption of appropriate measures, sector efficiency would improve, thereby contributing to the desired effect of reducing energy demand and greenhouse gas and other polluting emissions. The options that can be considered are set out below.

30. Policy instruments to create an enabling environment and appropriate incentives include mounting public awareness campaigns; establishing energy audit mechanisms and monitoring systems; encouraging energy service companies; supporting research, development and demonstration and liberalizing the import of energy-efficient technologies.

31. Technology dissemination options for improving end-use energy efficiency in the residential and commercial buildings sector include wider diffusion of technologies, such as more efficient equipment and appliances; efficient heating and air-conditioning systems; and more efficient building envelope designs.

32. Institutional mechanisms that could be considered include those that are required for regulatory and legal frameworks for implementing policies on incentives; energy efficiency standards and labelling of equipment; and inviting the private sector and communities to contribute to achieving the intended goals.

33. At the international level, options include increasing the flow of information, technology and financial resources; and building capacity.

34. Issues and options concerning energy efficiency improvements in the transportation sector are dealt with in a separate section (paras. 50-58 below).

E. Advanced fossil and nuclear fuel technologies

35. Advanced technologies have matured in the industrialized countries for the development, production and utilization of fossil (oil, gas, coal, oil shale and tar sands) and nuclear fuels that would contribute to the reduction of environmental impacts by way of both efficiency improvements and reduced pollutant emissions. The emissions from fossil fuel combustion themselves have local, transboundary and global impacts. As the economies of developing countries expand in association with higher levels of consumption of energy, the resulting emissions will increase.

36. Both developed and developing countries are concerned with the magnitude and rapid growth of these emissions, and both have become interested in minimizing their increase, while at the same time not restricting the programmes and initiatives of developing countries for meeting their basic human needs and further developing their economies. Meeting that challenge calls for concerted effort on the part of the global community to engage in the mobilization of further financial assistance, technology transfer, infrastructure development and capacity-building. In addition to significant funding, some advanced technologies, such as nuclear technology, demand adequate infrastructure and capacities (regulatory, safety, educational and fuel-cycle management, including waste disposal) that need first to be established in those countries. This also applies to the development and utilization of advanced technologies that are characterized by very low pollutant emissions and reduced costs in meeting environmental objectives.

37. Thus, the issues related to advanced technology transfer include the following:

(a) As the economies of developing countries expand, requiring higher levels of energy consumption, what strategies will permit the associated levels of emission to be managed within the overall framework of reducing total emissions without sacrificing economic development?

(b) What kind of international cooperation arrangements can be made to facilitate the provision of capacity development and transfer of relevant technology to reduce the environmental impact of the development of fossil fuels and to reduce the associated local health hazards and environmental pollution?

(c) What kind of international cooperation arrangements can be made to facilitate the provision of capacity development for nuclear power management and the establishment of the necessary safety and regulatory environment?

(d) What kind of measures can be adopted by developing nations to enhance the acquisition of advanced fossil and nuclear fuel technologies to reduce energy-related emissions?

(e) How can the international mechanisms already in place be made more effective and responsive to the challenges of transferring clean fossil fuel technologies and/or nuclear fuel technologies?

38. Policy instruments at the national level to give a higher priority to the reduction of energy-related emissions include linking national energy policies to sustainable development policies; reorienting national budgets and priorities to focus more resources on acquiring the relevant advanced technologies and associated know-how, while enhancing rather than substituting localization of technology; adopting policies that improve the economic environment and security needed to attract foreign investment; and providing the institutional arrangements necessary to implement advanced fossil and nuclear fuel technologies.

39. Economic and financial instruments available at the national level cover economic restructuring; economic liberalization; privatization of the financial and energy sectors; balance of trade goals; and the proposed clean development mechanism.

40. Technology dissemination at the national level involves capacity-building, education, safety practices and environmental and integrated resource planning.

41. Institutional approaches available at the international level include assistance from industrialized nations to developing countries in obtaining the relevant technologies to minimize energy-related emissions and in developing the technical and managerial capacity to effect such reductions. This could be effected by providing funding in the form of development aid; providing access to the relevant technologies through concessional financing; consideration of increased cooperation in intellectual property matters regarding specific crucial technologies; North-South cooperative partnerships for institution strengthening; capacity-building and knowledge transfer; joint research and development efforts; and South-South cooperation.

42. In attempting to motivate developing nations to adopt advanced technologies, the promotion of attractive opportunities is very important. Consideration needs to be given to whether existing funding mechanisms that address this issue could benefit from a review of the scope for their improvement or for establishing new mechanisms that could help to meet these challenges more effectively.

F. Renewable energy

43. Although renewable energy in its modern forms, excluding large hydropower, currently plays a relatively minor role in the global energy system, its progressively increasing role is considered crucial if the objectives of energy for sustainable development are to be achieved. At its nineteenth special session, the General Assembly has recognized, *inter alia*, that action is needed by all actors — Governments, the international community and the private sector — to ensure increased development and utilization of renewable energy sources, including the promotion of research, development and demonstration, and training activities.

44. Since the time of the United Nations Conference on New and Renewable Sources of Energy, held at Nairobi in 1981, nearly all countries have been attempting to adopt strategies for promoting renewable energy, in diverse ways under distinct sets of constraints. Each form of renewable energy has specific availability characteristics. Diffusion of the technologies for harnessing each form faces distinct barriers and constraints. Policy options and strategies for wider scale application of renewable energy need to recognize that diversity of national circumstances, as well as of technology options.

45. Issues that need to be addressed with respect to renewable energy include the following:

(a) What mechanisms and strategies are needed for increased development and utilization of renewable sources of energy through national efforts and international cooperation, including the promotion of research, development and demonstration activities?

(b) How can international efforts be mobilized to facilitate an increase in the flow of technologies and investments in mature renewable energy technologies and at the same time strengthen national capacity in the policy, institutional, technology, financing and commercialization areas?

(c) What are the options available for addressing such issues as improving opportunities for decentralized energy, a more equitable basis for consumption, the specific energy concerns of women, public participation, grass-roots involvement, concerns about competition between food and biomass energy, water requirements for and soil impacts resulting from

new biomass applications, and concerns about the visual impact of wind farms?

(d) What mechanisms are needed to intensify renewable energy development in view of its potential for emission reduction and in what way could the proposed clean development mechanism facilitate this?

46. Policy options available at the national level include linking renewable energy policies to sustainable development policies and to actions consistent with international agreements; an enabling environment; legal and regulatory policies and frameworks for attracting investment; and providing a clear policy message to mobilize all key actors and catalyze them into action.

47. Technology dissemination options at both the national and international levels include market-oriented approaches for the diffusion of mature solar, wind, biomass and other renewable energy technologies; enhancing funding for research, development and demonstration; investing in the creation of national centres of excellence in renewable energy, which in turn can lead to strengthening local capacity; establishing networks at the subregional, regional and international levels in order to attract international support and to foster international cooperation, including South-South cooperation; facilitating joint research programmes and cost-shared research; and facilitating the process of learning from the experience of industrialized nations in establishing closer links between research and development and industry and in establishing international cooperation agreements and partnerships.

48. Institutional arrangements at the national level also include establishing national institutions in the public and private sectors for the implementation of policy and regulation; supporting decentralized institutions that can provide the necessary interfaces for programme promotion and serve a catalytic role by providing public information and encouraging participatory approaches involving NGOs and community-based organizations; and facilitating institutional networks for research, development and demonstration.

49. At the international level, additional options for increasing the contribution from renewable energy include promoting freer trade in renewable energy devices and systems; facilitating the creation of an enabling environment for rapid market growth; increasing funding for achieving cost reductions; facilitating technology transfer agreements on easier terms; supporting national efforts to build organizational and manufacturing capacity for the diffusion of renewable energy technologies; evolving innovative financing and credit mechanisms; and mobilizing private-sector investment. Also to be considered are ways and means of strengthening the linkage between existing international mechanisms, such as the Global Environment Facility, and renewable energy technology development and utilization. New mechanisms that could be considered include initiating international energy forums for dialogue on global issues, and linking centres of excellence into regional and international networks for the development and diffusion of renewable energy technologies and for training of scientists, engineers and technicians in the development and utilization of those technologies, as well as establishing regional networks for the exchange of experience in the development and application of renewable energy, research and development cooperation, including joint development projects, the sharing of testing and training facilities and South-South cooperation for capacity-building.

G. Energy-related issues in transportation

50. In the context of sustainable development, major policy objectives in the transportation sector are to:

(a) Ensure the adequate growth and efficient use of the transportation system to underpin growth in economic activity;

(b) Ensure that the development of the transportation system meets the needs of all sectors of society for mobility and accessibility;

(c) Mitigate the adverse impacts of transportation-related activities on human health and productivity and environmental quality.

51. The transportation sector is a major user of energy. Transportation, including equipment, travel and freight shipments, is one of the fastest growing sectors of the world economy. World demand for the major petroleum-based transportation fuels has been increasing steadily, having averaged an annual increase of about 1.9 per cent since 1970, for a current daily total of over 36 million barrels of oil. Continued growth in transportation fuels is anticipated as the

vehicle efficiency gains witnessed over the last two decades appear to have tapered off or stalled for the largest energy-using modes. Any continued efficiency gains will be overshadowed by rapid growth in all modes of transportation, resulting in continued increase in the demand for petroleum-based transportation fuels.

52. Worldwide, the transport sector accounts for about 23 per cent of anthropogenic carbon dioxide emissions today. Growing concerns over the environmental impact of transportation fuels related to carbon dioxide and other polluting emissions have stimulated research and development on alternative fuels and technologies. The available alternative transportation fuels that have attracted the most interest and for which technology is actively being tested and developed are natural gas, electricity, liquefied petroleum gas, methanol, ethanol, rape seed oil, methyl ester and hydrogen. Passenger vehicles offer the greatest opportunity for improving energy efficiency and reducing environmental impacts using advanced technology and alternative fuels.

53. Yet, despite vehicle efficiency improvements, (a) the increase in vehicle-kilometres travelled has more than offset the increase in average fuel economy, (b) increased use of heavy trucks appears to have substantially outpaced modest efficiency gains, and (c) in the airline industry, the rapid surge in passenger-miles travelled has offset the substantial increase in per-passenger fuel economy. Finally, since transportation accounts for a substantial share of emissions of gaseous, particularly greenhouse gases, pollutants and particulate matter, it is becoming increasingly important to monitor the relationship between transportation and the environment.

54. Thus, the energy-related issues in the transportation sector include the following:

(a) How can the cost that transportation imposes on society and the environment be managed, notably in terms of traffic congestion costs, accidents, pollution and the degradation of ecosystems and landscapes?

(b) How can growth in alternative-fuel vehicles, which currently constitute a small fraction of the total world vehicle stock, be stimulated? What measures are needed to encourage faster adoption of alternative fuels?

(c) What measures are needed to consolidate efficiency gains into an overall reduction of emissions resulting from passenger vehicle, truck and airline traffic?

55. Economic and financial options that could be considered are market instruments, such as fiscal incentives and regulations, and other measures for increasing availability through the establishment of the infrastructure necessary to establish convenient refuelling facilities for alternative fuels.

56. Technology options that can be considered to address the environmental impacts are improved performance of internal combustion engines and controls on motor vehicle emissions through the use of cleaner fuels, i.e., lead- and sulphur-free gasoline, fuel additives to reduce pollution and catalytic converters to reduce tailpipe emissions of gaseous pollutants, carbon monoxide, volatile organic compounds and nitrogen oxides. In addition, large-scale replacement of the current petroleum-based transportation system by a system using fuels derived from completely renewable sources of energy, including hydrogen from the electrolysis of water and electric vehicles powered by electricity from renewable energy sources, could reduce a significant proportion of the greenhouse gas emissions from vehicular transportation.

57. There are a large number of potentially useful policies for reducing the negative environmental and social impacts of transportation. A classification of such policies includes measures to: (a) rationalize demand; (b) encourage a change of transportation modes; (c) raise energy efficiency within each transportation mode; (d) promote alternative fuels; and (e) integrate urban planning and transportation planning, leading to higher reliance on public transportation systems. Thus, with the aim of reducing local air pollution, regional acidification and greenhouse gas emissions, national-level policies can focus on increasing efficiency and fuel flexibility by promoting short-term efficiency improvements; developing markets for alternative fuels; developing technologies for alternative fuel vehicles; rationalizing demand for travel; and putting in place adequate emission control measures with effective enforcement procedures.

58. At the international level, with many developing countries on the threshold of rapid motorization, a programme of action targeted at several major cities in

the various regions of the developing world with a view to developing blueprints for implementing the measures identified above could be developed, with international collaboration between city authorities, urban planners and bilateral and multilateral sources of finance, to demonstrate and thereby promote policies to mitigate adverse impacts on human health and productivity and environmental quality resulting from transport-related activities in urban centres.

H. International cooperation

59. The above discussion of issues and options concerning energy for sustainable development underscores the need for intensifying international cooperation, including South-South cooperation, in order to move towards sustainable patterns of production, distribution and utilization of energy that would lead to a sustainable future for all. Many issues lend themselves to constructive dialogue and genuine partnership based on mutual interests and benefits at the international level, and point to the need for private-public partnerships, both domestically and internationally, and both bilaterally and multilaterally. There is, therefore, a need for an evolving commitment to increased investments and financial flows, for the transfer of relevant technology and for promotion efforts in research and development in these areas. There is also a need to encourage Governments and the private sector to consider appropriate ways to gradually promote environmental cost internalization in order to achieve more sustainable use of energy.

60. It is of crucial importance that international cooperation also be directed at building national capacity, which encompasses creation of public awareness, education and training; promoting the need for detailed information flows regarding developments taking place worldwide; and facilitating the formulation and application of appropriate standards in the production, conversion, distribution and utilization of the various energy services.

61. Official development assistance (ODA) remains a significant source of external funding for many developing countries. Moreover, it plays an important complementary and catalytic role in promoting sustainable development.

62. To that end, the following important issues arise:

(a) What special measure or efforts can be envisaged to achieve donor Government commitments regarding the ODA target set for at the United Nations Conference on Environment and Development, part of which is to be used by recipient countries to address energy and related problems?

(b) What efforts can be made by the multilateral financial institutions to increase their support, including through concessional mechanisms, to developing countries in support of their efforts in implementing sustainable energy development?

63. In the effort to mobilize capital for investment in support of sustainable energy development, of crucial importance is the need for recipient countries to create a favourable climate for increased investment by the international community, including the private sector, as well as for donor support of activities in energy and related areas.

IV. Conclusions

64. Energy plays an important and pervasive role in modern societies; thus, its proper management is essential to the achievement of the goals of sustainable development. Moreover, examination of some of the key issues in the debate on energy and sustainable development clearly shows that achieving a sustainable future will require the concerted effort of all levels of Government, the private sector, civil society and the international community.

Annex

Reports of the Secretary-General to be prepared for submission to the Committee on Energy and Natural Resources for Development

- Energy and the residential sector
- Renewable sources of energy, with special emphasis on solar energy
- New financial mechanisms and economic instruments to speed up the investment of sustainable energy development
- Promising strategies and initiatives to accelerate the development and implementation of sustainable energy technology
- Coordination of energy activities within the United Nations system

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Commission on Sustainable Development
Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development
First session
New York, 6-10 March 2000

Letter dated 15 February 2000 from the Permanent Representative of Portugal addressed to the Secretary-General

I have the honour to transmit to you, on behalf of the European Union, a position paper for the first session of the Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development, to be held in New York from 6 to 10 March 2000 (see annex).

I would be grateful if you could circulate this letter and its annex as a document of the Commission on Sustainable Development.

(*Signed*) António **Monteiro**
Ambassador
Permanent Representative

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Annex

European Union position paper for the first session of the Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development

1. The challenge today and tomorrow

Energy is an indispensable ingredient for economic development. At the same time, however, conventional forms of energy production, distribution and consumption are linked to environmental degradation, which threatens human health and the quality of life as well as the integrity of the Earth's ecosystem. Furthermore, the availability of energy services is extremely unevenly distributed. Billions of people do not have access to electricity. Billions of people must collect and use solid fuel for cooking, with all the attendant impact on their own health, their time for other activities and the environment. With continued population growth, the access to affordable and appropriate energy services must and should grow significantly in order to improve the standard of living of the world's population.

The General Assembly has given the international community a mandate to work for a sustainable energy future for all. If this is to become a reality, change of extraordinary magnitude is necessary. The challenge before us is: how can affordable and appropriate energy services be produced and delivered economically and in an environmentally sound and socially acceptable manner? And how can the international community promote a movement towards a sustainable energy system?

With average per capita consumption of energy six times that of developing countries, industrialized countries have a major responsibility to contribute to the development of an energy system that would be supportive of sustainable development.

The main non-sustainable elements of the current situation are:

- Lack of access to energy services to meet and improve the conditions of the poor;
- Emissions and waste problems with a strong negative impact on human health and the environment;
- Unsustainable use of finite energy resources.

2. European Union priorities

The demand for energy services is projected to increase sharply in the next decades: the International Energy Agency expects total global energy demand to grow by close to 65 per cent from 1995 to 2020 in a business-as-usual scenario. It is therefore imperative to take policy decisions to shift towards a more sustainable situation by:

- Securing equitable access to affordable and appropriate energy services for all, as a prerequisite to alleviating poverty and economic development in all parts of the world;
- Limiting emissions and waste problems with negative impacts on the local, regional and global environment, and which threaten human health and well-

being. The need to meet international emission reduction commitments should be kept in mind reaffirming the high importance of an early ratification of the Kyoto Protocol;

- Making the best use of available energy resources, in particular respecting the limits to the usage of finite fossil energy resources;
- Ensuring high-energy efficiency in all end uses, and cleaner and more efficient production and conversion of energy;
- Increasing the use of renewable energy sources in all consuming sectors, including grid-connected as well as decentralized systems.

Governments must assume responsibility in setting up long-term sustainable energy policies, *inter alia*, by structuring energy sector decision processes in a democratic, transparent and participatory manner.

In order to best learn from past experience, all countries need access to appropriate technological and organizational tools so as to follow a sustainable development path.

3. Strategies to meet the priorities

The European Union (EU) advocates the following strategies to meet the priorities set out above:

- Governments using their ability to influence the production, distribution and use of energy through multiple actions — involving laws and regulations, fiscal policy, workable revenue collection methods, efficient pricing and education – in order to encourage structural reforms in the energy sector, including the market reforms necessary to make energy producing and consuming activities supportive of sustainable development, e.g., by eliminating monopolies when they are inefficient;
- In parallel, achieving accuracy of price signals, through internalization of externalities or environmental benefits, *inter alia*, by energy taxes (strengthening the implementation of the polluter pays principle) and phasing out of energy subsidies when they are harmful (both direct subsidies and implicit subsidies). Social objectives of most existing energy subsidies can often be met much more efficiently by means of well-targeted social programmes;
- Paying close attention to long-term development planning since national energy balance is largely determined by long-lived infrastructure of the major energy-consuming sectors, such as transportation, urban lay outs, buildings and industrial plants;
- Attracting private investment to energy service delivery systems by promoting structural reform, ensuring judicial security and creating an adequate business environment in order to orient investments towards sustainable development objectives;
- Establishing strong policies, strategies and schemes to ensure energy efficiency in conversion processes and all end uses of energy, at the same time minimizing energy inputs and ensuring overall, least-cost solutions to society;

- Promoting eco-efficiency as a means of reducing energy demand, for instance through recycling, or through the redesign of goods so as to use less energy-intensive materials;

- Increasing support for public and private research and development to bring sustainable energy technologies to the market. Technologies appropriate to specific local context of developing countries should be developed through cooperation in research and through joint business ventures. Particular attention should be given to the best use of available technologies given their large potential for improving energy efficiency;

- Urging international financial institutions to promote sustainable energy systems and projects, including energy efficiency-related investments, through their lending policies, and urging them to develop innovative financing models, such as microcredit lines, with special emphasis on the needs of the least developed countries;

- Inviting the United Nations system and donor countries to promote sustainable energy in their development cooperation activities. The importance of donor countries fulfiling the United Nations objective of 0.7 per cent of official development assistance (ODA) is underlined. ODA should be concentrated on activities and objectives that market forces will not achieve;

- Promoting general awareness and capacity-building in sustainable energy policies on the supply side and in the major energy demand sectors (city planning, building, transport infrastructures, industry and agriculture);

- Enhancing private-public partnerships to create shared understandings on issues pertinent to the development of sustainable energy policies;

- Supporting increased participation of civil society in national and international policy development and project development, through the rule of the law and democratic, participatory and transparent decision-making;

- Urging donors, international financial institutions and the United Nations system to pay particular attention to issues relating to the least developed countries and the poorest communitites, in particular by treating sustainable energy as a means of providing services to reduce poverty and promote the development process rather than as an end in itself. Special attention should be given to traditional forms of energy — mostly biomass — in order to ensure sustainable production and collection practices, optimize conversion processes and minimize health impacts and deforestation;

- Promoting environmentally sound renewable energies through energy policies in all consuming sectors;

- Encouraging energy-efficient transport technologies, such as public transport, railways or bimodal systems, through transport planning and in the building of adequate infrastructure.

In order to implement the above strategies both strong political commitments and adequate organizational set-ups are needed in all countries.

4. March 2000 session in New York of the Intergovernmental Group of Experts on Energy and Sustainable Development

This session:

- Should lead to the identification of a limited number of issues on which work should be done leading up to the ninth session of the Commission and as an input to the 10-year review of the United Nations Conference on Environment and Development;
- Should orchestrate the international work to be done until the ninth session of the Commission (including lead countries for specific themes, inter-sessional events etc.);
- Should discuss links between the energy and transport themes of the ninth session of the Commission;
- Should also be attended by energy specialists from governmental development agencies.

5. Desired outcome of the ninth session of the Commission

The desired outcome of this session would be:

- Adoption of a "Shared goals of action" paper on sustainable energy;
- Recommendations on those areas where intergovernmental action is necessary to promote national policies for energy in the service of sustainable development, including frameworks for possible national strategies for sustainable energy;
- Definition of the role that the United Nations system should play in moving towards implementing the objectives of the General Assembly agreed at its nineteenth special session;
- Recommendations for and support of regional cooperation schemes for sustainable energy, including regional strategies for sustainable energy, regional conventions on transboundary air-pollution and regional energy systems;
- Consideration of concrete proposals to strengthen public-private partnerships;
- Opportunities before and during the ninth session of the Commission to share experiences and best practices on sustainable energy development.